



State of Nevada – Department Of Personnel

CLASS SPECIFICATION

<u>TITLE</u>	<u>GRADE</u>	<u>EEO-4</u>	<u>CODE</u>
INFORMATION SYSTEMS SPECIALIST IV	41	B	7.911
INFORMATION SYSTEMS SPECIALIST III	39	B	7.913
INFORMATION SYSTEMS SPECIALIST II	37	B	7.924
INFORMATION SYSTEMS SPECIALIST I	34	B	7.933

SERIES CONCEPT

Information Systems Specialists provide one or more of the following services regarding information systems: consultation; functional requirements and needs assessment; analysis; system development (design, programming and construction); implementation and maintenance for various platforms of information systems. Positions in this series are characterized by requirements to define and implement a solution to a given problem which requires an individually tailored response, and incumbents must have the ability to program in a general purpose programming language and possess detailed knowledge of the necessary interfaces to the computer operating system.

Work with customers to develop initial project planning including systems overview, feasibility studies, cost/benefit analyses, proposed project budgets, and project time, cost and resource estimates.

Develop systems by utilizing the systems requirements definition as a basis for developing comprehensive data base definitions, data hierarchy and relations definitions, logical diagrams to show process flow and program definition, file definitions, update processes and frequencies, input and output screen formats, security requirements and provisions, audit trails, and any other information required by the system; develop specification of hardware for computer terminals, mainframe resource requirements, distributed and individual computer configurations, back-up and recovery software procedures, data base languages, access methods, communications networks and protocol, data and communications interface requirements to existing systems, and any other necessary information.

Develop and maintain computer programs or computer systems to enhance, correct, or modify existing computer systems and improve efficiency, or provide for changing needs of the customer.

Oversee the development of documentation packages which provide data processing staff and systems users the complete understanding of the system including logic flow charts, user guides, program test results, complete program listings, full operations instructions, and system and program narratives.

Provide or arrange user training through on-site training sessions and demonstrations; provide technical support and develop solutions to actual situations customers encounter with the system.

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SERIES CONCEPT (cont'd)

Design and develop test data for new and/or existing computer programs and systems individually and as a whole to ensure computer programs interrelate properly; develop tests by simulating actual computer program runs utilizing test data.

Perform related duties as assigned.

CLASS CONCEPTS

Information Systems Specialist IV: Under administrative direction, incumbents perform the most advanced professional and technical work associated with bridging the requirements of a user problem with capabilities of an information system. Incumbents are required to be an acknowledged authority on a broad range of developmental and implementation issues and serve as the primary technical resource for lower level personnel. Incumbents at this level are expected to have strategic planning responsibilities and be involved in inter-agency coordination.

Serve as a primary technical resource for the agency strategic Information Systems Planning, agency personnel and others outside the organization; serve as liaison to Department of Information Technology personnel, vendors, outside users and others; coordinate with other agencies and departments concerning technical issues.

Analyze and resolve implementation design issues in situations of unusual difficulty or in the presence of critical or conflicting requirements.

Review present and prospective software and/or hardware methodologies in order to keep agency practices current with advancing technology.

Perform programming as assigned and maintain technical currency in construction coding techniques; develop agency test and validation procedures.

Provide high level consultation and/or training for information systems personnel and system users.

DISTINGUISHING CHARACTERISTICS:

- *Complexity of Work:* The work requires application of the highest level technical expertise in the translation of user or project requirements characterized by conflicting or critical design parameters into a computer based solution. At this level, incumbents are concerned with the discovery of generic solution approaches to entire classes of related problems. Incumbents also develop and document appropriate standards and criteria for acceptable programming and documentation practice.

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CLASS CONCEPTS (cont'd)

Information Systems Specialist IV: (cont'd)

- *Supervision Received:* Under administrative direction, incumbents perform the most advanced professional and technical work associated with information systems.
- *Management and Supervision of Others:* Projects are typically lengthy and sufficiently complex to warrant delegation of segments to others. Incumbents in this class serve as supervisors, assigning, coordinating, and reviewing the work of others. This class should be used for positions that meet the standards described on the Information Systems Specialist III specification and, in addition, exercise line supervision over other professionals and perform some managerial duties. For a non-supervisory position to be allocated to this class, it must be demonstrated that the position exceeds the Information Systems Specialist III in all or most of the classification factors.
- *Personal Contacts:* Ongoing contacts occur with information systems policy makers, administrators, technical colleagues in other departments/agencies, vendors, Information Systems Specialists, and with users to exchange information, provide technical assistance and direction, explain complicated techniques, identify problems, and make recommendations regarding feasibility of projects and costs. Incumbents usually have high-level consulting and training responsibilities.
- *Scope and Effect:* Incumbents are assigned projects of major importance and difficulty. The work directly affects numerous users and agency programs. Errors typically disable or delay a number of projects with significant effects. Incumbents generally have strategic planning responsibilities, and are involved in inter-agency coordination.

Information Systems Specialist III: Positions allocated to this class typically carry full responsibility for information systems projects of significant size and scope and are expected to resolve design conflicts and perform comparative analysis on the costs/benefits of various implementation alternatives.

Perform advanced professional and technical information systems work in the analysis of user requirements and development and implementation of computer based solutions.

Determine project objectives by analyzing user needs and developing an overall logical model and sequencing of the tasks to be implemented; coordinate with other agencies and departments concerning technical issues.

Review available hardware and/or software tools to choose implementation platform; develop detailed plan for problem segmentation and inter-module linkage; implement or has subordinates implement individual components.

Perform technical programming and maintain technical currency in construction coding techniques; develop and carry out system validation procedures.

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CLASS CONCEPTS (cont'd)

Information Systems Specialist III: (cont'd)

Provide general consultation and/or training for information systems personnel and system users.

May serve as project leader as assigned.

DISTINGUISHING CHARACTERISTICS:

- *Complexity of Work:* Incumbents perform advanced level analytical and technical work where user or project requirements are of considerable complexity. Detailed knowledge of the user's subject matter is required. This typically involves developing, implementing, coding, testing, and documenting multiple program segments written in a general purpose programming language.
- *Supervision Received:* Incumbents generally receive minimal technical supervision, and are responsible for all technical decisions involved in an assignment, including those that are unconventional. Guidelines are available in the form of policies, procedures, technical manuals and bulletins and vendor support.
- *Management and Supervision of Others:* Projects are sometimes lengthy and sufficiently complex to warrant delegation of segments to lower level Information System Specialists. Incumbents in this class may serve as project leaders (lead workers) assigning, coordinating, and reviewing the work of others.
- *Personal Contacts:* Ongoing contacts occur with users, other Information Systems Specialists, administrators, and colleagues in other agencies to gather information, provide technical assistance, identify problems, and make recommendations regarding feasibility and cost of projects and equipment purchases. Incumbents may have general consultation and training responsibilities.
- *Scope and Effect:* Projects assigned typically have broad scope and incumbents are responsible for successful operation of the project. The work directly affects numerous users and agency programs. Errors typically disable or delay the project in question, causing inconvenience to others and costly reparations.

Information Systems Specialist II: This is the journey level class in the series and incumbents work under general supervision to perform professional information systems and programming work. Technical work involves identifying user requirements, coding, development and implementation of computer based solutions, problem analysis and implementation of a solution in situations of moderate difficulty. Actions and decisions affect important, ongoing projects within an agency.

Determine project objectives by analyzing user needs; determine the nature and sequence of the tasks that must be implemented in order to produce a solution; review available hardware and/or software tools in order to make appropriate recommendations.

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CLASS CONCEPTS (cont'd)

Information Systems Specialist II: (cont'd)

Develop detailed plan for problem segmentation and inter-module linkage and implement individual components.

Develop and carry out system validation procedures; maintain technical currency in construction coding techniques.

Provide mid-level consultation and/or training for information systems personnel and system users.

May serve as lead worker as assigned.

DISTINGUISHING CHARACTERISTICS:

- *Complexity of Work:* Incumbents perform analytical and technical work where user or project requirements are of moderate complexity. This typically involves developing, implementing, coding, testing, and documenting one or more significant program segments written in a general purpose programming language.
- *Supervision Received:* Incumbents are expected to independently plan and prioritize activities, select methods and techniques, and resolve most problems of detail. Advice is sought in situations involving unusual or difficult circumstances. Technical manuals, precedents, and agency standards, practices, and policies provide guidelines.
- *Management and Supervision of Others:* Supervision of others is not a requirement for allocation to this class.
- *Personal Contacts:* Regular contacts are with users, other information systems specialists, and colleagues in other agencies. Incumbents may have mid-level consultation and training responsibilities.
- *Scope and Effect:* Projects at this level tend to be limited in scope and incumbents are typically responsible for successful operation of the project they are dealing with. The work directly affects users of the project and errors may disable or delay the project in question, causing inconvenience to others and extra costs to correct.

Information Systems Specialist I: This is a continuing (advanced) training class where incumbents work under immediate supervision in performing professional information systems work in the determination and analysis of user requirements and development and implementation of computer based solutions. Positions allocated to this class are trained in standard information system procedures, handle maintenance and minor adaptation of existing systems, develop small programs, and assist higher level personnel with complex and lengthy projects.

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CLASS CONCEPTS (cont'd)

Information Systems Specialist I: (cont'd)

Determine the nature and sequence of the tasks that must be implemented to produce a solution.

Recommend implementation of platform according to precedent or supervisory instruction.

Code individual components using appropriate hardware/software tools.

Carry out established project validation procedures.

DISTINGUISHING CHARACTERISTICS:

- *Complexity of Work:* The work involves professional analytical and technical programming work where user or project requirements are of limited complexity. Incumbents are typically involved in developing, implementing, coding, testing, and documenting single program segments written in a general purpose programming language.
- *Supervision Received:* Incumbents generally receive immediate supervision through precedents, and technical review and direction by higher level staff. Planned activities that are non-routine are reviewed while in progress.
- *Personal Contacts:* Ongoing contacts occur with users and other Information Systems Specialists to gather information and advice and receive instructions.
- *Scope and Effect:* The work directly affects the users of the project being implemented, which at this level tend to be limited in scope. Errors typically disable or delay the project in question, with variable effects depending on the situation.

MINIMUM QUALIFICATIONS

SPECIAL NOTES AND REQUIREMENTS FOR ALL POSITIONS IN THIS SERIES:

- * In order to meet the needs of each agency, a position may require specialized background or skills in order for the incumbent to perform the essential functions required of the position. Any specialized background required will be identified prior to the recruitment process within the parameters of the class specification.
- * Education above the high school level may be substituted for the required experience on the basis of 30 semester credits equals six months of the required experience up to a maximum of one year of the required experience.

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MINIMUM QUALIFICATIONS (cont'd)

INFORMATION SYSTEMS SPECIALIST IV

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university with major course work in computer science, information systems, mathematics or related field of study and five years of professional data processing experience including two years of supervisory or project management experience (*See Special Notes and Requirements*); **OR** two years of experience as an Information Systems Specialist III in Nevada State service; **OR** an equivalent combination of education and experience.

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

Detailed knowledge of: principles, practices and procedures required to develop, design and implement information system-based solutions in a wide range of problem domains; principles, tools and techniques as applied to writing, modifying and documenting programs; principles of design and testing procedures; access, methods and file structures; strengths and limitations of a number of general purpose programming languages (in software-oriented positions). **Working knowledge of:** project control techniques, including cost estimating and resource scheduling; at least one formal systems design methodology; i.e. methodology/principles of Information Strategic Planning. **General knowledge of:** at least one network topology and protocol; a number of general purpose programming languages. **Ability to:** extract logical commonalities among classes of problems; select appropriate data structures and algorithms to achieve efficient problem representation and resolution; translate data structures and algorithms; test and validate information systems; maintain effective working relationships with others; communicate effectively both orally and in writing; work cooperatively and interact with colleagues and users when developing or modifying programs; read, interpret and apply written information; make decisions and use independent judgment (independently choose appropriate action after reviewing alternatives); assign work and provide training to subordinate personnel. **Skill in:** interactive programming techniques.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):

Working knowledge of: supervisory principles and techniques; Nevada Revised Statutes and departmental rules, regulations, policies and procedures; telecommunications principles and support software; several computer platforms, capabilities and support software; at least one network topology and protocol. **Ability to:** evaluate performance of subordinate personnel; interview users to identify needs; *and all knowledge, skills and abilities required at the lower levels of the series.*

INFORMATION SYSTEMS SPECIALIST III

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university with major course work in computer science, information systems, mathematics or related field of study and three years of professional data processing work experience (*See Special Notes and Requirements*); **OR** two years of experience working as an Information Systems Specialist II in Nevada State service; **OR** an equivalent combination of education and experience.

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MINIMUM QUALIFICATIONS (cont'd)

INFORMATION SYSTEMS SPECIALIST III

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

Detailed knowledge of: general purpose programming languages (in software-oriented positions); principles, tools and techniques as applied to writing, modifying and documenting programs. **Working knowledge of:** at least one formal systems design methodology. **Ability to:** logically analyze problems of considerable complexity; decompose problems into constituent parts; test and validate information systems; maintain effective working relationships with others; cooperatively interact with colleagues and users when developing or modifying programs; communicate effectively both orally and in writing.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):

Detailed knowledge of: principles, practices and procedures required to design and implement information system-based solutions in a wide range of problem domains; access methods and file structures; principles of design and testing procedures. **General knowledge of:** telecommunications principles and support software. **Ability to:** make decisions and use independent judgment (independently choose appropriate action after reviewing alternatives). **Skill in:** interactive programming techniques; problem solving, analysis and synthesis; *and all knowledge, skills and abilities required at the lower levels of the series.*

INFORMATION SYSTEMS SPECIALIST II

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university with major course work in computer science, information systems, mathematics or related field of study and two years of related professional work experience (*See Special Notes and Requirements*); **OR** two years of experience as an Information Systems Specialist I in Nevada State service; **OR** an equivalent combination of education and experience.

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

Working knowledge of: at least one or more general purpose programming language (in software-oriented positions); techniques of diagramming program flow; principles, tools and techniques as applied to writing, modifying and documenting programs; principles of designing testing procedures; basic programming techniques such as table handling and on-line file updates. **General knowledge of:** principles, practices, and procedures required to design and implement information systems-based solutions. **Ability to:** logically analyze problems of moderate complexity; decompose problems into constituent parts; test and validate systems; maintain effective working relationships with others; communicate effectively orally and in writing.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):

Working knowledge of: principles of design and testing procedures. **Skill in:** interactive programming techniques; *and all knowledge, skills and abilities required at the lower level of the series.*

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MINIMUM QUALIFICATIONS (cont'd)

INFORMATION SYSTEMS SPECIALIST I

EDUCATION AND EXPERIENCE: Graduation from an accredited college or university and one year of related work experience (*See Special Notes and Requirements*); **OR** one year of experience as a Computer Information Systems Trainee in Nevada State service; **OR** an equivalent combination of education and experience.

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

General knowledge of: at least one or more general purpose programming languages (in software-oriented positions). **Ability to:** logically analyze problems of limited complexity; maintain effective working relationships with others; communicate effectively orally and in writing.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):

Working knowledge of: at least one or more general purpose programming language (in software-oriented positions). **General knowledge of:** principles, practices, and procedures required to design and implement information system-based solutions; principles, tools and techniques as applied to writing, modifying and documenting programs. **Ability to:** test and validate systems; decompose problems into constituent parts.

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards for positions assigned to this class.

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ESTABLISHED:	7/1/95P	7/1/87-12P	7/1/87-12P	7/1/87-12P
	9/16/94PC	7/18/86PC	7/18/86PC	7/18/86PC
REVISED:		7/1/95P	7/1/95P	7/1/95P
		9/16/94PC	9/16/94PC	9/16/94PC
REVISED:	7/1/97LG	7/1/97L	7/1/97LG	7/1/97LG
REVISED:	10/1/97UC	10/1/97UC	10/1/97UC	10/1/97UC